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MISCELLANEOUS NOTES ON ANTILLEAN MOSSES, 1. THELIA (ANOMODONTACEAE) AND ACAULON (POTTIACEAE) NEW TO THE WEST INDIES

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Buck, William R. (New York Botanical Garden, Bronx, NY 10458-5126, U.S.A.). Miscellaneous notes on Antillean mosses, 1. *Thelia* (Anomodontaceae) and *Acaulon* (Pottiaceae) new to the West Indies. Moscosoa 5: 186-188. 1989. The moss genera *Thelia* and *Acaulon* are reported as new to the West Indies based upon the collection of *T. hirtella* (Hedw.) Sull. and *A. muticum* (Hedw.) C. Müll. in the Dominican Republic in January 1987. The biogeographical significance of their presence in Hispaniola is discussed.

Los géneros de musgos *Thelia* y *Acaulon* se reportan como nuevos para las Antillas. Este informe está basado en colecciones de *T. hirtella* (Hedw.) Sull. y *A. muticum* (Hedw.) C. Müll. hechas en la República Dominicana durante enero de 1987. La importancia biogeográphica de su presencia en la Española es tratada.

Although I had previously spent about three months collecting mosses in Hispaniola, as well as re-examining numerous specimens by other collectors, during my most recent visit to the island in January 1987, I collected two genera of mosses, both unrecorded for the West Indies. The two genera, *Thelia* and *Acaulon,* are both primarily temperate in distribution, and add to the continental affinities of the moss flora of Hispaniola (Steere, 1985).

Although the Sierra de Baoruco has a fairly distinctive flora, more like that of the Haitian Massif de la Selle than like that of other Dominican highlands (cf. Berry, 1983), due to poor roads I had never collected there, except in the southernmost Las Abejas. The area, except for pockets of hardwoods, did not appear particularly rich for bryophytes. The dry-mesic scrub forest of pines, acacias, junipers and other woody plants adapted to an edaphically dry area do not provide adequate substrates for a diverse bryoflora. However, in this habitat I found a moss forming dense carpets over rocks and soil. It proved to be *Thelia hirtella* (Hedw.) Sull. (Dominican Republic. Prov. Independencia: Sierra de Baoruco, ca. 9 km S of Puerto Escondido, 960 m, ca. 18° 18'N, 71° 31'W, pine-scrubland ecotone with *Juniperus lucayana (?),* 24 Jan 1987, *W. R. Buck 14424* (JBSD, NY)).

Thelia is a genus of three species endemic to eastern North America. *Thelia hirtella* is the most widespread in the genus, ranging from Wisconsin and southern Ontario to Nova Scotia, south to Florida and Texas, and northeastern Mexico (Crum, 1966). Although its extension into Hispaniola would not have been predicted, it does add another genus to a bryoflora already rich in north temperate representatives.

The other genus new to the West Indies, *Acaulon,* is also temperate in origin, but its habitat is very different and its explanation in the flora more interesting.

On a previous trip to the Dominican Republic I briefly collected in an area along the Río Nizao at the base of Pico Alto de la Bandera, just east of Valle Nuevo. Even in that short period I collected both an endemic (*Pleuridium holdridgei* Crum & Steere) as well as major disjuncts of taxa rare even in their area of primary provenance (*Bryoxiphium norvegicum* (Brid.) Mitt. —north-central United States; and *Brachymenium fabronioides* (C. Müll.) Par.—central Andes). Therefore, I was anxious once again to collect in this little-disturbed area, and indeed I was rewarded. Fairly promptly I discovered the autumn ephemeral *Acaulon muticum* (Hedw.) C. Müll. var. *muticum.* (Dominican Republic. Prov. La Vega: Just E of Valle Nuevo on road up Pico Alto de la Bandera, along Río Nizao, 7200 ft, ca. 18° 47'N, 70° 40'W, pine-tussock grass vegetation, on moist soil, 10 Jan 1987, *W. R. Buck 14035* (NY)). What makes this find so interesting is twofold. First, it is the var. *muticum,* primarily a European taxon only known in eastern North America from two collections (Crum & Anderson, 1981), rather than the common American *A. muticum* var. *rufescens* (Jaeg.) Crum. This recent Hispaniolan collection represents, to my knowledge, the only primarily European taxon in the moss flora. Second, the dispersal of *Acaulon* is indeed problematic. Most moss distribution patterns can, if no other reasonable option is available, be explained by long-distance dispersal (van Zanten, 1976), since most mosses release thousands of wind-borne spores. However, in *Acaulon* the leaves are concave and enclose the immersed, inoperculate capsules. Spore release relies on an irregular rupturing of the capsule, usually associated with the death and decay of the plants. Therefore, spores are most likely only able to disperse very short distances unless moved by water. For this reason it would be convenient if one could postulate a land connection between Hispaniola and North or Central America. During the Symposium on the Biogeography of the West Indies held at the Florida State Museum, University of Florida, on March 2—5, 1987, such speculations were used by some zoologists to explain current patterns of distribution of organisms. However, Perfit and Heezen (1978) have shown that although some of the Greater Antilles were indeed much closer to or even in contact with Central America, during the tectonic movements to their present locations they were most likely submerged part of the time. Perfit re-emphasized this during the 1987 Biogeography Symposium but made it plain that Caribbean geology is among the most complicated that exist and no conclusions are absolute. Therefore, the occurrence of *Acaulon* on Hispaniola

remains a mystery. Until all the geological evidence is available, speculation based purely on the distribution of the biota is tentative.

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